

Operating Manual

Selection and Connection of Triac LED Drivers

1. Overview and Purpose of LED Drivers

An LED driver operates from a 230V/50Hz mains voltage, delivering a constant current and voltage within a specific range at the output, thereby functioning as a current stabilizer.

Do not confuse a driver with a power supply!*

Drivers are available in constant current and multi-current types. Multi-current drivers include a DIP switch on the casing, allowing output current adjustments to connect LEDs with different current characteristics or multiple LEDs in parallel.

2. Selecting an LED Driver

Driver selection should be based on the LED's technical specifications as provided by the LED manufacturer. When replacing a non-dimmable driver with a Triac dimmable driver, the technical specifications of the dimmable driver must match those of the non-dimmable driver. Pay attention to the driver's output characteristics (OUTPUT or SEC), specifically:

- Current (measured in mA)
- Voltage range (measured in V)

The current of the dimmable driver must not exceed the current rating of the non-dimmable driver, and the voltage range should match.

Only a qualified technician should select the appropriate driver.

***Warning!** A power supply serves as a voltage stabilizer and is not suitable for individual LEDs without a current-limiting resistor, such as with LED strip lights.

3. Replacing an LED Driver

To replace a non-dimmable driver with a Triac dimmable driver, disconnect the fixture from the power supply and detach it from the non-dimmable driver by removing the driver cover and extracting wires from the terminals. Connect the Triac dimmable driver in reverse order. If the non-dimmable driver is non-dismantlable, wires may be clipped with wire cutters or a specialized tool. The Triac dimmable driver should then be connected to the lighting fixture using soldered wires or special terminals. For brightness control of color-temperature adjustable fixtures via Triac, replace the fixture's driver with a Triac dimmable driver and connect it to a dimmer. The color temperature switch should be retained (see diagram 2).

Replacement must be performed by a qualified specialist.

4. Key Technical Specifications

Model Number	PSL-TR40-300mA-DE	PSL-TR40-150-300mA-DE	PSL-TR40-350-500mA-DE
Input Voltage, V	AC180-240	AC180-240	AC180-240
Network Frequency, Hz	50/60	50/60	50/60
Power Factor	≥0.9	≥0.9	≥0.9
Max. Output Power, W	12	12	20
Output Voltage Range, V	23-40	23-40	23-40
Output Current, mA	300	150/200/250/300	350/400/450/500
Current Adjustment	No	Yes	Yes
Efficiency, %	≥80	≥80	≥80
Protection Class	II	II	II
IP Rating	IP54	IP20	IP20
Dimming	Yes	Yes	Yes
Color Temperature Adjustment	No	No	No
Control Protocol	Triac	Triac	Triac
Dimming Range, %	0.1-100	0.1-100	0.1-100
Ripple Coefficient, %	≤5	≤5	≤5
Operating Temperature Range (ta), °C	-20...+45	-20...+45	-20...+45
Max. Housing Temperature (tc), °C	≤65	≤65	≤65
Dimensions (L*W*H), mm	44*44*25	130*30*20	151*39*30
Weight, g	62	56	90

5. Contents

1. Driver
2. Operating Manual

6. LED Driver Placement

Place the driver in proximity to the lighting fixture.

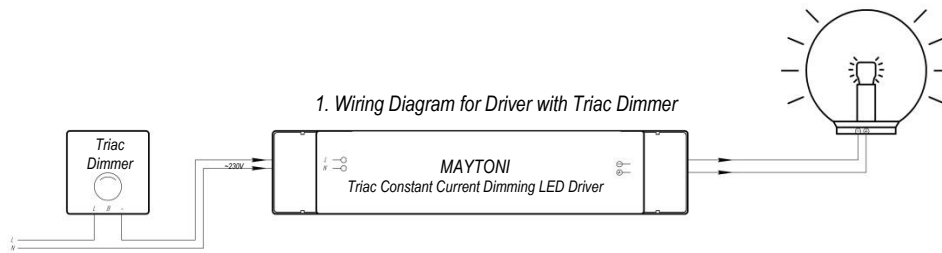
Note:

For installations involving multiple drivers, it is recommended to space them at least 200 mm apart and ensure at least 200 mm of free space around each device for natural ventilation. Use forced ventilation if free space is limited.

7. Connecting a Driver to the Power Network

- Connect the phase wire to the L (PRI) lead;
- Connect the neutral wire to the N (PRI) lead;
- Connect the + (red) and - (black) wires to the load, maintaining polarity and color coding.

7.1. Triac LED Driver Connection Diagrams



*Warning!

Disconnect the power supply before starting to avoid electric shock.

⚠ Safety Precautions!

- All installation work must be performed by qualified personnel with the appropriate permits. If necessary, consult a qualified electrician.
- Perform all installation and removal work only when the network is de-energized.
- Do not install drivers in locations where accidental contact with electrical connections may occur.
- Follow all connections per National Electrical Code (NEC).
- The device is not suitable for networks without the standard ~230V 50Hz, as it may malfunction or fail prematurely.

8. Troubleshooting

Issue	Cause	Solution
Driver does not work	No contact in connections	Check all connections
	Incorrect input and output connection to the power supply	Incorrect connection will cause immediate failure. Replace the power supply with a new one
	Incorrect polarity in the power supply and load connection	Connect the load, ensuring correct polarity. If the device does not operate, the load may be faulty and needs to be replaced
	Driver is defective	Contact the seller or service center
Load does not operate	Short circuit in load	Verify all connections for shorts
	Load is defective	Contact the seller or service center
Housing temperature is too high	Insufficient space for heat dissipation	Check air temperature, ensure proper ventilation

Warranty

- This product is covered by a 36-month warranty from the date of sale, documented by a proof of purchase.
- Warranty service is provided if the malfunction is due to a manufacturing defect and all handling, transport, and storage guidelines in this manual are followed.
- The warranty is void in cases of misuse, damage post-purchase due to negligence, or violation of usage guidelines, as well as in events beyond control such as fire, flood, electrical surges, and other natural disasters or intentional damage by third parties.

Methods for Selecting and Connecting a Dimmer

1. Selecting a Dimmer

To ensure compatibility of LED fixtures with a dimmer, verify the driver's markings to determine the dimming method. Dimmers may operate by either leading-edge (RL or TRIAC) or trailing-edge dimming (RC or MOSFET). If the driver lacks dimming method markings, universal dimmers with DIP switches are available, allowing users to select the appropriate dimming mode (RL/RC).

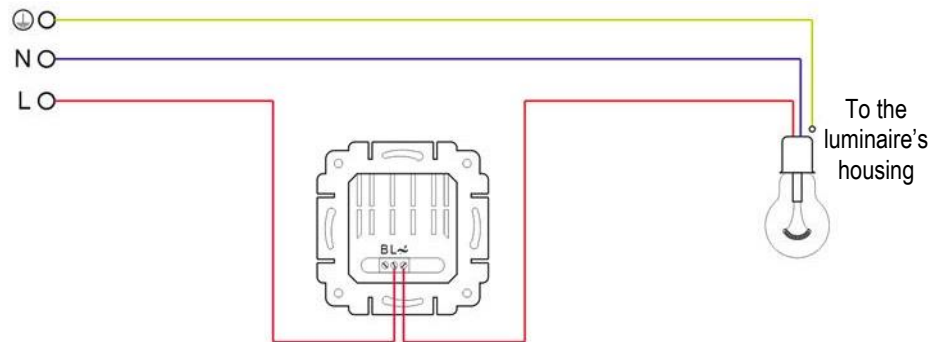
Consider the total wattage of all connected LED fixtures and select a dimmer with a 15-20% power buffer.

For circuits with power supplies and monochrome LED strips, use dimmers for LED strips. For CCT, RGB, and RGBW LED strips, use special dimmer-controllers.

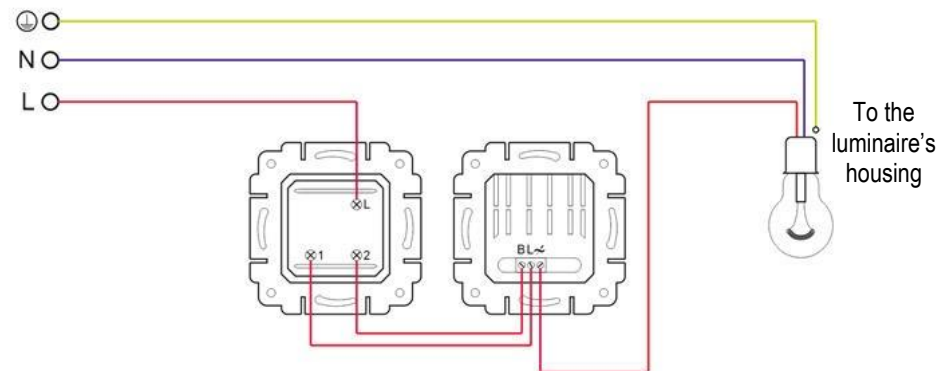
2. Connecting a Dimmer

Connect the dimmer according to the supplied wiring diagram. Below are common connection schemes for dimmers.

2.1 Dimmer Wiring Diagram

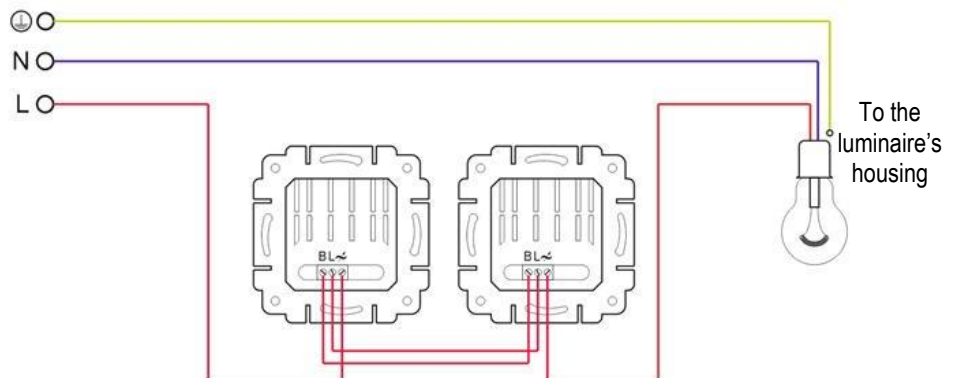


2.2 Dimmer with Pass-Through Switch



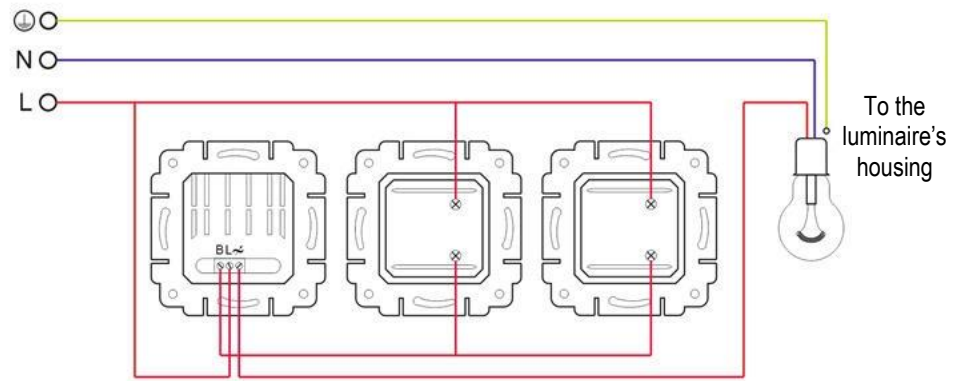
2.3 Dual-Dimmer Pass-Through Circuit

This setup is for adjusting brightness and turning on/off from two locations, requiring two identical dimmers.



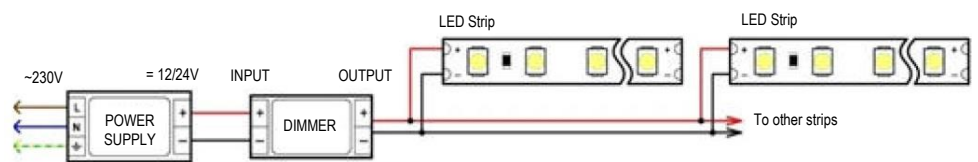
2.4 Dimmer with Lighting Control Buttons

This setup enables lighting control from multiple locations.



2.5 Dimmer with LED Strip (Single-Color or White-Emitting)

This setup enables lighting control from multiple locations.



2.6 RGB Controller with RGB LED Strip

